



## Relationship between the Characteristics of e-Commerce Live Streaming and Purchase Intentions: Moderating Effect of Hedonistic Shopping Value

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### Abstract

E-commerce live streaming has experienced a significant and rapid increase in recent years, establishing itself as a vital catalyst for the growth of the e-commerce business. This research delves into the influence of e-commerce live streaming attributes, namely, authenticity, interactivity, and entertainment, on consumers' purchase intentions. It is based on the Stimulus–Organism–Response (SOR) theory and focuses on customer flow experience and hedonic shopping value. To evaluate the study model, the authors gathered survey data from 360 live streaming e-commerce customers and used structural equation modeling. The results indicate that client purchase intentions in e-commerce live streaming are positively influenced by authenticity, interactivity, and entertainment. Authenticity, entertainment, and interaction all contribute to enhancing consumers' flow experience in e-commerce live streaming, with interactivity being the most influential factor. The phenomenon of flow experience has a beneficial impact on the purchasing intentions of clients engaged in e-commerce live streaming. The flow experience serves as an intermediary between the characteristics of e-commerce live streaming and consumers' intentions to make purchases. Hedonic shopping value affects the relationship between the flow experience and the customer's intention to make a purchase. Put simply, when customers have a strong perception of the pleasure they derive from shopping, their intention to make purchases becomes more profound when they are influenced by the state of flow. This study not only contributes to the body of knowledge regarding the correlation between the attributes of e-commerce live streaming and consumer receptiveness, but it also provides businesses and platforms that utilize e-commerce live streaming with actionable recommendations. By improving the content design of live streaming features in e-commerce, customer engagement and immersion are significantly enhanced, establishing a foundation for increasing consumer purchase intention.

### Keywords:

E-commerce Live Streaming;  
Interactivity;  
Authenticity;  
Entertainment;  
Flow Experience;  
Consumers' Purchase Intention;  
Hedonic Shopping Value.

### Article History:

<b>Received:</b>	31	January	2024
<b>Revised:</b>	09	May	2024
<b>Accepted:</b>	16	May	2024
<b>Published:</b>	01	June	2024

## 1- Introduction

The introduction of digital technology has given rise to a novel business model known as e-commerce live broadcasting [1, 2]. The rapid evolution of e-commerce has facilitated the reorganization of industries and supply chains, and e-commerce has emerged as a novel catalyst for consumption and economic expansion. The number of webcast users in China reached 751 million in December 2022, indicating an increase of 47.28 million compared to December 2021. This figure accounts for 70.3% of the total Internet user population. The total number of consumers participating in e-commerce live streaming reached 515 million, indicating a growth of 51.05 million compared with December 2021. The consumer segment in question represents 48.2% of the total number of Internet users, as reported by the 51<sup>st</sup>

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**DOI:** <http://dx.doi.org/10.28991/ESJ-2024-08-03-018>

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Statistical Report on China's Internet Development [3]. The live e-commerce business in China reached a total of 1.2012 trillion yuan in 2021, and it is projected to reach 2.1373 trillion yuan by 2025. China's post-1990s and post-00 s Internet users number close to 320 million, accounting for 23% of the country's Internet users [4]. This segment represents a new wave of youthful collectives that possess strong financial support, actively engage in online platforms, and embrace fashionable consumption ideologies. They have emerged as a formidable presence in the consumer market. Live shopping has emerged as an essential marketing strategy for organizations and a significant catalyst for the expansion of e-commerce sales [5]. Because of its significant commercial value, e-commerce live streaming warrants thorough investigation.

In the era of the Internet of Everything and the new development pattern of "dual circulation", live commerce, through organic integration with the social value chain and diverse cultural ecosystems, is giving rise to a multitude of new industries, formats, and models [6]. With the rapid development of online live streaming, the concept of live commerce has gradually gained general recognition in academia [6, 7]. The relationships between e-commerce live broadcasting and users' propensity to utilize it [8], the duration of users' attentiveness [9, 10], and the act of bestowing gifts during live streaming [11] are the focal points of current research. Additionally, some studies have explored the relationship between e-commerce live streaming and consumers' purchase intentions. Key findings suggest that consumers' purchasing intentions may be influenced by environmental stimuli [12], live streaming strategies [13], IT capabilities [14], interactions [15, 16], and social presence [17].

However, to date, there has been little systematic research on the influence of e-commerce live streaming features on consumer's purchase intentions. Liu et al. [18] found that the genuineness and visibility of live broadcasts had beneficial effects on consumer satisfaction, hence influencing the purchasing decisions of customers. Interactivity, authenticity, and vividness in online shopping significantly impact customer's purchase intentions [18, 19]. E-commerce live streaming caters to the unique and specialized needs of consumers, attracting their attention, increasing the rate at which they make purchases, and accelerating sales [20]. Drawing upon an extensive review of the literature concerning e-commerce live streaming, this study identifies three fundamental attributes inherent in this mode of communication: interactivity [21, 22], authenticity [23], and entertainment [27]. The e-commerce anchor engages in active interaction with customers, and participants are able to speak with one another through pop-ups or other means to establish a virtual community that is inclusive and centered on the streamer. E-commerce live streaming provides user-friendly, speedy, and mutually beneficial engagement, in contrast to the traditional method of marketing for online stores, which involves consumers initiating consultations and discussions. This move from passive assistance to proactive guidance creates a more immersive purchasing environment.

Moreover, e-commerce broadcasters use real-time broadcasting to display commodities and supply customers with information associated with the commodities they purchase. This helps customers build a more accurate understanding of the commodities and services that are offered by e-commerce. By essentially creating a direct shopping experience that resembles face-to-face interaction, as a result, the perceived genuineness of e-commerce products increases, which leads to improved consumer confidence. The live streaming of e-commerce is remarkable because of its ability to provide entertainment, which is one of its distinguishing characteristics. In contrast to traditional e-commerce, e-commerce live streaming originates not only from shopping behavior but also from live streaming materials and interactive processes. The aforementioned characteristics of e-commerce live streaming are all conducive to enhancing the quality of consumers' dynamic experiences. As the quality of dynamic experiences improves, consumers' levels of flow experience, perceived value, and willingness to interact also increase [25, 26]. Gao & Bai [27] suggested that flow experience can influence consumers' behavioral intentions, particularly their likelihood of making purchases on websites. E-commerce live streaming affords customers a feeling of autonomy, authority, and engagement, thus amplifying their flow experience and nurturing their intentions to make purchases [28].

It has been verified that consumers' flow experiences generated by their participatory actions during online shopping also positively influence hedonic shopping value [29]. Customers with hedonic shopping orientations emphasize not only the utility of the items they previously purchased but also the pleasure and experiential emotions brought about throughout the entire process of purchasing products [30]. Consumers exhibiting a hedonic shopping value orientation tend to derive joy and immersion from their shopping encounters, thereby fostering a flow state and enhancing their inclination to make purchases. In essence, e-commerce live streaming offers customers a comprehensive avenue, allowing them not only to engage with products and derive pleasure from shopping authentically but also, by the vibrant entertainment ambiance and robust engagement, to manifest diverse loyalty behaviors.

In conclusion, previous research has investigated the influence that the features of e-commerce live broadcasting and flow experience have on the purchases that consumers want to make on an individual basis. However, few studies have thoroughly examined the engagement, authenticity, and entertainment of e-commerce live streaming as separate characteristics to investigate the impact that these aspects have on the flow experience and the desire to make a purchase [31]. Surveys on flow experience remain relatively scarce. Furthermore, although research on the impact of consumer perceptions on hedonic shopping value in traditional retail environments has made progress, there is still a research gap in the field of e-commerce live streaming, particularly concerning how hedonic shopping value moderates the effect of flow experience on consumer purchase intention.

To fill these gaps, this study uses the features of e-commerce live broadcasting as the independent variable (S), specifically focusing on the elements of interactivity, authenticity, and entertainment; applies the SOR model, in which the flow experience generated by consumers within it is the mediating variable (O); and introduces hedonic shopping value as a moderating variable. The dependent variable (R) is used to analyze the purchasing intentions of consumers. Our objective is to examine the characteristics of e-commerce live streaming and how the flow experience affects consumers' intentions to make a purchase. Additionally, we investigate whether this influence differs depending on consumers' level of hedonic purchasing value. This study theoretically enriches and deepens our understanding of purchasing intention mechanisms within e-commerce live broadcasting. On a practical level, this study aims to provide guidance for enhancing consumers' willingness to purchase in e-commerce and facilitating the enhanced integration and advancement of the e-commerce live broadcasting sector.

## **2- Research Background and Hypothesis Development**

### ***2-1-S-O-R Theory***

The S-R theory is the foundation for the S-O-R theory, which holds that complex human behaviors can arise under the influence of stimuli. Mehrabian & Russell [32] conducted an additional investigation based on the S-R theory and posited that there should be a process of individual psychological transformation between the "stimulus" and "response". In other words, an external stimulus will initially impact an individual's psychological state before influencing their response. As a result, the S-O-R theory was proposed. Several studies have examined e-commerce live streaming consumers utilizing the SOR model. A structural equation model was utilized by Zhang et al. [33] to empirically investigate the correlation between the shopping experience of consumers and their purchasing behavior. This investigation was based on the S-O-R theory. According to the conclusions of their investigation, a higher level of customer satisfaction during the shopping experience is positively connected with an increased possibility of engaging in purchase behaviors exhibited by the consumer. Kang et al. [22] built a customer participation research model under live broadcasting, taking the personalized characteristics and interactive responsiveness of anchors during live broadcasting as environmental stimuli, the changes in the strength of consumer perception as organisms, and customer participation as the final response results. In live shopping, stimuli are classified as interaction, entertainment, genuineness, or visibility according to Liu et al. [18], who used the stimulus-organization-response theoretical model to make their conclusions. Moreover, Xu et al. [7], in their exploration of consumer shopping behaviors in e-commerce live streaming, identified anchor attraction, quasisocial interaction, and information quality as impactful external stimuli. The organism (O) represents emotional and cognitive internal processes that mediate behavioral responses and environmental stimuli [34]. A theoretical model was developed by employing the S-O-R model in its construction. Regression analysis was carried out to assess the influence of the interactive experience, the quality of the information, the professional status, and the visual appeal on consumers' desire to make a purchase for e-commerce live broadcasting [35]. Additionally, the research revealed that these elements affect the intention to make a purchase by way of the mediating role that cognitive attitude and emotional attitude play.

### ***2-2-The Impact of E-Commerce Live Streaming Functionalities***

The critical components of e-commerce live broadcasting that differentiate it from traditional broadcasting and influence the likelihood that customers will purchase are the genuineness, interaction, and entertainment that are offered to customers. The article's term "authenticity" pertains to the real-time, unaltered presentation of products during live e-commerce broadcasts, including their full and unedited display. Through the process of exhibiting, customers have the opportunity to acquire the most direct and authentic engagement experience possible.

During live broadcasting, broadcasters provide genuine descriptions of things as well as reviews that are both impactful and informative, and they also make suggestions for purchases. According to Li et al. [15], this increases the level of engagement and passion that clients have for viewing the live stream. Hence, incorporating genuine e-commerce live streaming would entice consumers and immerse them in a particular setting, thereby fostering favorable emotional encounters. The live broadcasting of e-commerce has an impact on consumers' purchase intentions due to its authenticity, engagement, and vibrancy, and the consumer's perception of trust serves as a middleman in achieving this influence. According to Zhang et al. [36], the credibility of e-commerce live broadcasting was found to have an effect not only on consumers' perceptions but also on their intentions to make a purchase. Liu et al. [37] suggested that authenticity is vital in live broadcasting and could promote consumers' sense of trust in products introduced by live broadcasting to be attracted by live streaming and arouse consumers' pleasant experiences. A live broadcast's incentive structure, top-notch content, and interactive elements can help viewers create a flow experience.

In contrast to traditional online purchasing, which involves obtaining product information by viewing other customers' images or text comments, e-commerce live streaming interactivity consists of diverse and reciprocal interpersonal exchanges. Consumers can send bullets, give gifts, and perform other similar activities that allow them to interact with information in real time and in both directions without being limited by time or distance. Through this approach, consumers can communicate with anchors or other customers who are present in the same broadcast room.

Wang et al. [38] examined the cognitive and emotional responses of consumers while viewing e-commerce live streaming in accordance with SOR theory. The researchers showed that consumers' feelings about products could improve by making e-commerce live broadcasting more interactive and fun and offering better prices. This would make them more likely to make a purchase. During e-commerce live broadcasting, a dynamic and engaging experience awaits viewers, allowing them to consult with the streamer, offer gifts and voice opinions, and interact with fellow viewers using pop-ups [39]. Remarkably, the streamers themselves actively participate in communication, going beyond product presentations [70, 41]. This intense degree of interaction between broadcasters and consumers holds substantial significance. It has the potential to trigger cognitive and emotional transformations within consumers, leading to a deeper comprehension of both the streamers and the products being showcased [42]. Consequently, Hou et al. [43] and Zhang et al. [16] noted that this heightened understanding fosters a sense of trust, ultimately influencing the purchase intentions of consumers. The interactivity of agricultural product live streaming platforms not only directly stimulates consumers' purchase intentions but also indirectly influences purchase intentions by altering consumers' psychological experiences [44, 45].

The main idea of this paper is that entertainment can be described by how much pleasure people obtain from live streaming to satisfy their joy psychology. Liu et al. [18] posited that the entertainment value of live broadcasting is manifested through the captivating subjects spoken by the anchors as well as various entertainment activities held by shopping platforms or anchors. These activities may include regular sweepstakes, virtual red envelope distributions, thumbs-up interactions, etc., all of which are designed to keep the audience entertained and immersed. The study showed that entertainment exerts a substantial impact on individuals' inclination to make a purchase [46]. An empirical study on the entertainment, interaction, and incentive mechanisms of purchasing in a live streaming setting to promote flow experience was carried out [47]. The company will continuously interact with consumers through various entertainment activities. It utilizes diverse live content and presentation formats to momentarily detach consumers from reality, helping them forget their worries and immerse themselves in the live broadcast. This real-time interaction can evoke comprehensive and unconstrained spiritual enjoyment for consumers, thereby creating a flow experience.

Consequently, we believe that in e-commerce live broadcasting, authenticity, interaction, and entertainment may impact the flow experience and consumer purchase intent. The presence of these attributes during e-commerce live streaming by consumers promotes the development of flow experiences and purchase intentions. On this basis, the following hypotheses are proposed in this paper:

**H1a:** *A positive association exists between the authenticity of e-commerce live streaming and consumers' purchase intentions.*

**H1b:** *A positive association exists between the interactivity of e-commerce live streaming and consumers' purchase intentions.*

**H1c:** *A positive association exists between the entertainment of e-commerce live streaming and consumers' purchase intentions.*

**H2a:** *A positive association exists between the authenticity of e-commerce live streaming and flow experience.*

**H2b:** *A positive association exists between the interactivity of e-commerce live streaming and flow experience.*

**H2c:** *A positive association exists between the entertainment of e-commerce live streaming and flow experience.*

### **2-3-The Impact of Flow Experience**

A phenomenon known as flow experience occurs in the realm of the internet. This phenomenon causes users to become so engrossed in an activity that they become completely involved in it, to the point that they ignore the existence of other stimuli, lose their sense of self-awareness, and are driven to continue participating in these activities.

Current studies have shown that as the quality of the consumer experience increases, so do the perceived value and the level of willingness to interact [25, 26]. Live broadcasting of e-commerce gives customers a sense of independence, authority, and engagement, facilitating an enhanced consumption experience and thus fostering purchase intentions [28]. The streaming experience represents a strong sense of engagement that results in a significant level of psychological involvement among virtual world users, such as satisfaction and loyalty [48]. Flow experience has an impact on consumers' behavioral intentions, specifically their chance of making a purchase on a website [27, 42]. There is a strong correlation between the flow experience of online students and their continued intentions [49]. Consumers who have used mobile devices for social commerce are more inclined to involve themselves in activities related to social commerce [50]. As Xu et al. [51] noted, this in turn influences the willingness of customers to buy.

The flow experience may enhance consumers' willingness to try and purchase related products or services by eliciting positive emotions and a state of complete absorption during the process of watching e-commerce live streaming, leading consumers to perceive time passing quickly and to feel a sense of effortless mastery over the task at hand. As a consequence, it is possible to conclude that participants in e-commerce live streaming who experience more intense feelings of flow are more likely to have the desire to make purchases. Overall, this study proposed hypotheses such as H3:

**H3:** *In regard to e-commerce live streaming, customers' purchasing intentions are positively impacted by flow experience*

### 2-4- Role of Flow Experience as a Mediator

Noort et al. [52] discovered that the flow experience of a particular website acts as a mediator between interactivity and cognitive reactions, emotional responses, and behavioral responses (including recommendation intentions, revisit intentions, and purchase intentions). Regular engagement in live broadcasting within this context of e-business might temporarily detach consumers from reality, causing them to become fully absorbed in the environment of live broadcasting, thereby forgetting their concerns and experiencing a state of flow [53]. According to Li et al. [15], live streamers demonstrate products, provide effective evaluations, offer purchase recommendations, and enhance consumers' interest in products during live broadcasts. The effect of entertainment on the traffic experience, perceived value, and attitude of consumers can be substantial regarding to e-commerce live broadcasting [24]. Consumers' attitudes are influenced by their flow experience. Unconsciously desiring to participate, consumers will be stimulated to make purchases by live broadcasters when they are immersed in a live broadcast environment [54]. According to Arghashi & Yuksel [55], the flow experience of consumers mediates the connection between trust and interactivity in augmented reality (AR) applications.

While watching e-commerce live streaming, live scenes and the host's explanations continuously stimulate users, prompting them to generate specific psychological experiences. When an excellent interactive relationship is established between the live streaming platform and users, users' trust, satisfaction, and perception of the live streaming quality all increase, resulting in positive feedback and subsequently leading to flow experiences. Flow experiences encourage users to become more immersed in watching product live streams and increase the likelihood of purchasing products on live streaming platforms. Hence, it can be deduced that individuals who undergo more intense sensations of flow while engaging in e-commerce live streaming exhibit a greater propensity to form intentions to make a purchase. From this, it is possible to deduce that consumers who view e-commerce live streams develop purchase intentions due to their acquired flow experience. As a result, this paper formulates hypotheses such as H4a, H4b, and H4c:

**H4a:** *In e-commerce live broadcasting, flow experience serves as an intermediary between consumers' purchasing intention and the concept of authenticity.*

**H4b:** *In e-commerce live broadcasting, the flow experience serves as an intermediary between consumers' purchasing intention and the concept of interactivity.*

**H4c:** *In e-commerce live broadcasting, the flow experience serves as an intermediary between consumers' purchasing intention and the concept of entertainment.*

### 2-5- Role of Hedonic Shopping Value as a Moderator

Hedonic shopping value places more emphasis on the shopping process, shopping experience, and shopping enjoyment and mainly reflects the emotional pleasure brought about by consumers while shopping. Customers strive for hedonic buying, prioritizing emotional experience over the end purchase result and time cost [56].

Existing studies indicate that the antecedent variables for consumers' flow experience in online shopping include the complexity of e-commerce websites [57], novelty [58], interactivity [59], and usability [60]. It has been verified that consumers encounter a flow experience when making online purchases due to their involvement, which positively influences hedonic shopping value. Sénécal et al. [29] noted that the enjoyment, focus, and challenging dimensions of the flow experience all positively influence hedonic shopping value. Online shopping has become a fragmented form of entertainment with a hedonistic tendency, increasing the likelihood of impulsive and unplanned purchases [61]. Yu & Bastin [62] studied the hedonic shopping value and impulsive buying behavior of Chinese consumers, and the results showed that all five dimensions of hedonic shopping value had a significant positive impact on impulsive buying. A customer with a hedonistic shopping orientation places greater emphasis on the pleasure and experiential sentiments that are brought about throughout the process of purchasing a product, in addition to taking into consideration the usefulness of the items that he or she has previously purchased [30].

Consumers with a hedonistic orientation tend to derive pleasure and immersion from the watching experience when they are watching e-commerce live streaming, which in turn leads to the occurrence of the flow experience. Consequently, this stimulates their intentions to make purchases. From this perspective, it is reasonable to hypothesize that consumers who embrace hedonism may demonstrate different levels of purchase intention in reaction to the stimulation of the flow experience. This correlation between the two factors is likely influenced by the strength of their hedonic beliefs. The following hypothesis is therefore proposed:

**H5:** *Hedonic shopping value positively regulates the relationship between flow experience and consumers' purchase intentions. When hedonism is elevated, the correlation between flow experience and consumers' intention to make a purchase becomes more pronounced.*

In this study, an S-O-R model and a set of fundamental hypotheses are presented. The connections between the various elements are shown in Figure 1. This finding suggests that authenticity (AUT), interaction (INT), and entertainment (ENT) affect the flow experience of consumers (FE), which in turn influences their willingness to purchase (PI). Furthermore, hedonic shopping value (HSV) also has an impact on the desire to make a purchase when consumers encounter a state of flow. In conclusion, this research framework formulates the underlying research model (Figure 1).

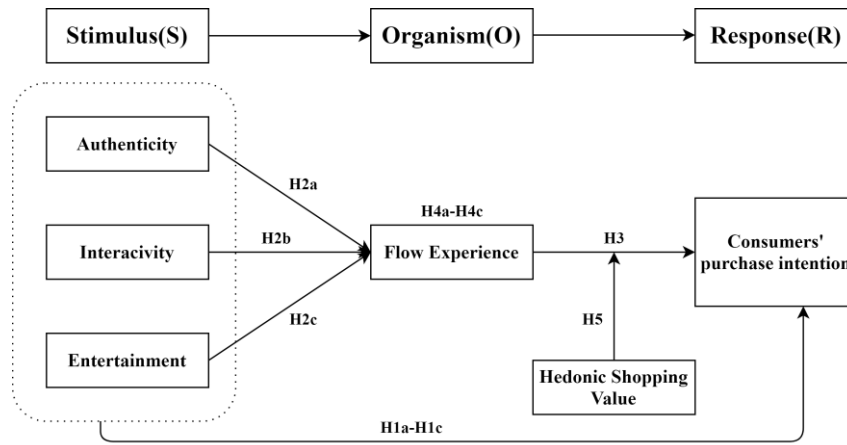


Figure 1. Conceptual model

### 3- Research Methods

The commencement of the research necessitates a comprehensive analysis of the current development status and trends within the e-commerce live-streaming industry to identify research gaps effectively. Building upon this foundation, the study draws upon the SOR (Stimulus-Organism-Response) theoretical framework to synthesize pertinent literature on e-commerce live streaming characteristics, flow experiences, consumer purchase intentions, and hedonic shopping values, thereby formulating research hypotheses. Subsequently, data collection is conducted through questionnaire surveys, followed by data analysis using SPSS and AMOS software. The findings are then subjected to further discussion, suggesting that businesses can enhance customer engagement and immersion on e-commerce live streaming platforms by offering authentic product demonstrations, incentives such as red packets and coupons, live interactions with audiences, or prize draws, thereby fostering enjoyable experiences. Furthermore, through a nuanced analysis of viewing and purchasing data, businesses can identify target consumers who exhibit hedonic shopping values, further stimulating purchase intentions. The flow chart of the methodology is shown in Figure 2.

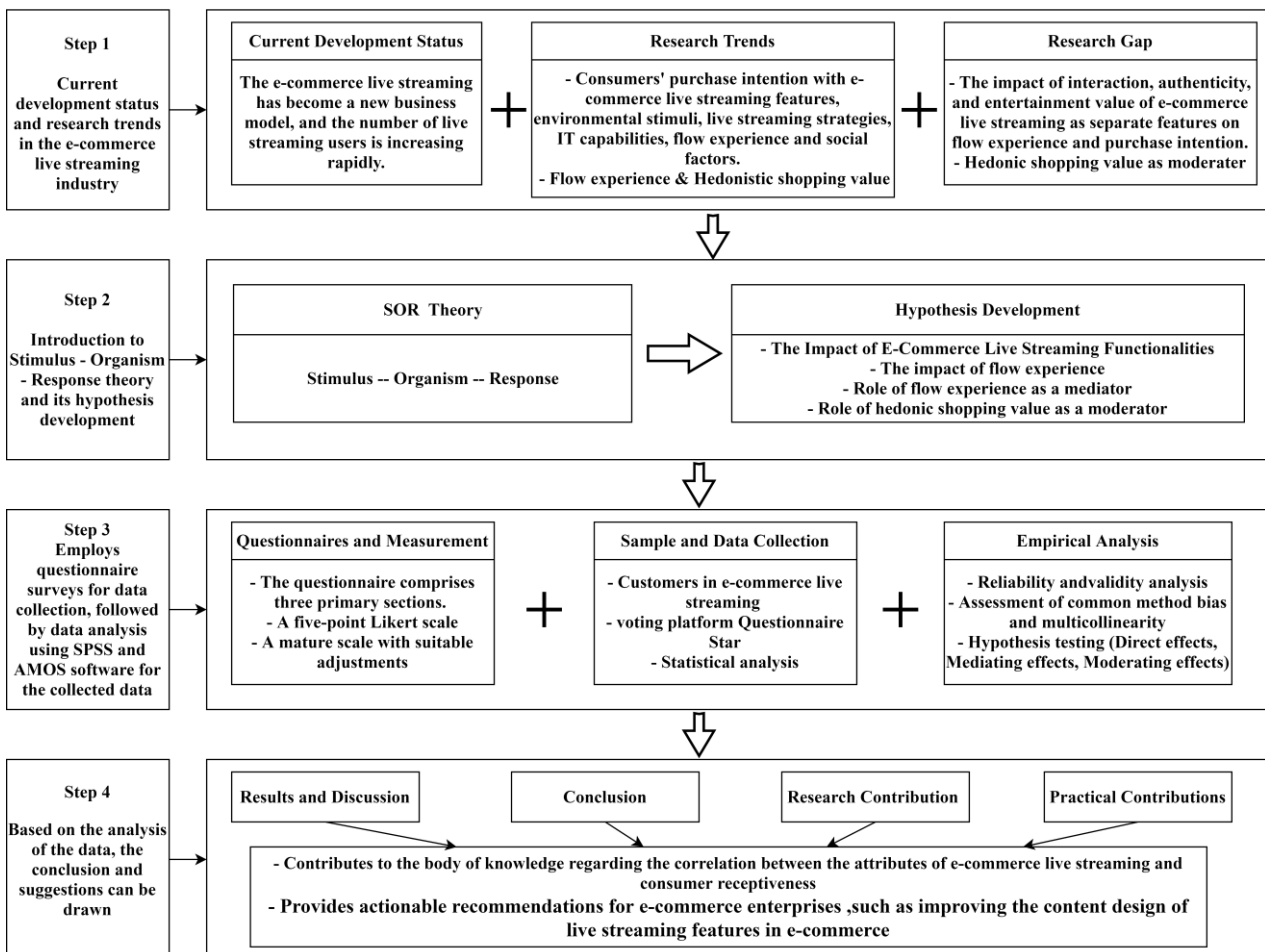


Figure 2. Research flowchart

### 3-1-Design of Questionnaires and Measurement

The survey questionnaire for the research starts with a concise overview of the research's background and goals. The questionnaire comprises three primary sections. The initial section provides fundamental details on users' participation in live streaming, including the most commonly utilized platform and the average daily viewing time. The second part involves descriptive data, including demographic information about the respondents (gender, age, education, occupation, and income). The third part encompasses four variables:

- The independent variable is the characteristics of e-commerce live streaming.
- The dependent variable is consumer purchasing intention.
- The mediating variable is flow experience.
- The moderating variable is hedonic shopping value.

A five-point Likert scale was used to assess all the constructs in the third part. On this scale, one indicated "strongly disagree," while five indicated "strongly agree." A greater number on the scale corresponded to a greater degree of agreement.

To enhance the questionnaire's reliability and validity, this study implemented a mature scale with suitable adjustments to account for the unique attributes of e-commerce live streaming. The assessment of interactions mostly pertains to the studies conducted by Liu et al. [63] and Wei et al. [64]. Rubin [65], and Tong [23] were cited as sources of authenticity. The entertainment scale was derived from the works of Lv et al. [31], Chen & Lin [24], and Liu et al. [66]. The scale of the flow experience was predominantly based on Chen and Lin [24]. An adaptation of the purchase intention scale was made for this study by Liu et al. [66], Chen et al. [67], and Tingchi Liu et al. [68]. The items for hedonistic shopping value were obtained from Babin et al. [69] and Jones et al. [70]. For their evaluation, the questionnaires were distributed to individuals who possessed a substantial amount of expertise in the field of e-commerce live broadcasting. We implemented the experts' recommendations by revising the initial questionnaire. A total of 198 respondents received the original questionnaires for the presurvey. After that, the final questionnaire was subsequently developed through adjustments made in response to the findings of the preliminary survey. The measurement details are shown in Table 1.

**Table 1. Reliability analysis**

Constructs	Items	Scales	Cronbach's $\alpha$
Authenticity (AUT)	AUT1	The information presented during the e-commerce live stream regarding the products or services was authentic	0.864
	AUT2	E-commerce live streaming showcased the commodities or services from various viewpoints	
	AUT3	Live streaming of e-commerce enabled me to gain a comprehensive comprehension of commodities or services	
	AUT4	The firsthand encounter with the commodities or services by the streamer enhanced my comprehension of them	
Interactivity (INT)	INT1	The e-commerce live broadcasting facilitated my active participation	0.778
	INT2	While I was watching the live streaming of the e-commerce event, I was able to have a conversation with the streamer through real-time chat	
	INT3	I engaged in real-time communication with fellow spectators during the e-commerce live streaming event	
Entertainment (ENT)	ENT1	The live streaming of e-commerce was intriguing	0.839
	ENT2	The live streaming of e-commerce provided me with a sense of relaxation	
	ENT3	The live streaming of e-commerce made me happy	
	ENT4	The live streaming for e-commerce was creative	
Flow Experience (FE)	FE1	I was fully engrossed in watching this e-commerce live streaming	0.816
	FE2	Occasionally, I become oblivious to my surroundings when engrossed in e-commerce live streaming	
	FE3	While viewing e-commerce live streams, I occasionally lost track of my current task	
	FE4	I experienced joy when looking at e-commerce live streaming	
Hedonic Shopping Value (HSV)	HSV1	I not only like to buy things but also enjoy the process of shopping very much	0.964
	HSV2	While engaging in live streaming of e-commerce, I am enthusiastic about purchasing novel things	
	HSV3	While viewing live streaming of e-commerce, I had a sensation of pleasure	
	HSV4	I derived pleasure from this shopping excursion for its intrinsic value, rather than solely for the products I may have acquired	
	HSV5	This shopping excursion provided a genuine sense of escapism, allowing me to momentarily ignore numerous concerns and anxieties	
Consumer Purchase Intention (CPI)	CPI1	My intention was to engage in a transaction through this e-commerce live streaming platform to acquire goods or services	0.763
	CPI2	I would perhaps make purchases of commodities or services in the e-commerce live broadcasting platform	
	CPI3	If there were commodities or service that I desire to get, my initial choice would be to make a purchase via this e-commerce live streaming room	

### 3-2-Sample and Data Collection

The research was conducted using an online questionnaire to gather the data. The distribution of the online questionnaire utilized the professional online survey, assessment, and voting platform Questionnaire Star. In China, this application is utilized by close to fifty million people [37]. To expand the scope of the sample's coverage, the survey link from the Questionnaire Star application was distributed via WeChat and QQ.

This study focuses on consumers who have engaged in e-commerce live streaming and completed purchases, encompassing regions such as Beijing, Shanghai, Guangdong, Fujian, and Guangxi. These regions represent both developed and less developed areas of e-commerce in China, offering a degree of representativeness. In addition, participants are expected to have observed e-commerce live broadcasts on well-known platforms for e-commerce in China, including Taobao, JD.com, and Vipshop. These platforms boast a large fan base and enjoy widespread attention and influence. Throughout the data collection period, the questionnaire's response rate was regularly monitored, and appropriate survey promotion measures were taken when necessary. This online data collection method ensures the widespread dissemination of the questionnaire and efficient data collection. We employed a screening question ("Have you ever viewed live broadcasting sessions on e-commerce platforms such as Taobao, VIPSHOP, Jingdong, Pinduoduo, etc., and subsequently made a purchase?") to select participants who engaged in purchasing activities after viewing e-commerce live streams. Individuals who had not watched or made a purchase were excluded. We collected a total of 419 surveys. After excluding incomplete, illogical, and online questionnaires completed in less than 1 minute, 360 valid questionnaires remained. This corresponds to an effective rate of 85.82%.

Table 2 illustrates the wide range and intricate nature of users engaged in e-commerce live streaming. Among participants, the proportion of females (63.1%) significantly exceeded that of males (36.9%). The largest proportion of users, 30.3%, were aged 24 years and younger. Following this group, users aged between 46 and 55 account for 21.1% of the total. A bachelor's degree is the most common level of education among users, constituting 61.1% of the total. The highest proportion is accounted for by individual business owners, accounting for 24.2% of the total. The company's employees (23.9%) and students (23.1%) followed. The majority of them had monthly incomes in two ranges: 3001–5000 yuan (29.4%) and 5001–10000 yuan (27.2%). Pinduoduo (44.4%) and Taobao (32.8%) are their top choices. The majority of users (66.4%) spend less than one hour watching e-commerce live streams each day. In general, the samples included in this study accurately represent consumers who engage in e-commerce live streaming.

**Table 2. Statistical analysis (N=360)**

Variable	Category	Frequency	Percentage (%)
The platform you most commonly use for e-commerce live shopping	Pinduoduo	160	44.4
	Taobao	118	32.8
	Jingdong	56	15.6
	Vipshop	7	1.9
	Amazon	16	4.4
	Others	3	0.8
The average daily duration of watching e-commerce live broadcasts (hour)	< 1	239	66.4
	1-2	42	11.7
	2-3	56	15.6
	More than 3	23	6.4
Gender	Male	133	36.9
	Female	227	63.1
Age(years)	< 24	109	30.3
	25-35	70	19.4
	36-45	68	18.9
	46-55	76	21.1
	56-65	19	5.3
	More than 66	18	5.0
Education level	Junior college and below	103	28.6
	Bachelor	220	61.1
	Master	35	9.7
	PhD	2	0.6



Occupation	Individual entrepreneur	87	24.2
	Education professional	53	14.7
	Corporate employee	86	23.9
	Government personnel	19	5.3
	Student	83	23.1
	Others	32	8.9
Income (monthly/yuan)	< 2000	47	13.1
	2001-3000	83	23.1
	3001-5000	106	29.4
	5001-10000	98	27.2
	10001-20000	18	5.0
	More than 20000	8	2.2

## 4- Empirical Analysis and Results

### 4-1-Reliability Analysis

Reliability, synonymous with consistency, seeks to assess the stability and consistency of a survey questionnaire. In regard to measurement, a scale that has a higher level of reliability will have a lower standard error. In the Likert scale methodology, the Cronbach's alpha coefficient is a measure of dependability that is frequently considered. Table 1 shows that the Cronbach's alpha values for all the variables exceeded 0.70. Furthermore, each composite reliability exceeded the suggested threshold of 0.70. It can be deduced from this that the magnitude of this investigation possesses a high degree of dependability [71].

### 4-2-Validity Analysis

First, a confirmatory factor analysis model was constructed based on the previous theoretical framework. Next, the SPSS sample data from earlier studies were imported, followed by an assessment of the model's fit. To empirically examine the hypotheses, structural equation modeling was employed. Based on the recommendations of Wu [72], the indices and criteria used to evaluate the appropriateness of a model are presented in Table 3. All these indices ( $\chi^2/df = 1.724 < 3$ ,  $RMSEA = 0.045 < 0.1$ ,  $IFI = 0.973 > 0.9$ ,  $CFI = 0.973 > 0.9$ ,  $GFI = 0.919 > 0.9$ ,  $TLI = 0.968 > 0.9$ ) demonstrated that the model of this paper has an ideal fit.

**Table 3. The research's model fit**

Items	$\chi^2/df$	RMSEA	IFI	CFI	TLI	GFI
Requirements	<3	<0.10	>0.9	>0.9	>0.9	>0.9
Indicators	1.724	0.045	0.973	0.973	0.968	0.919

The validity concept encompasses both convergent and discriminant models of validity. Validity can be broken down into two categories: convergent validity, which describes a strong correlation across items, and discriminant validity, which indicates a weak correlation or significant difference between constructs. To meet the suggested criteria set by Fornell & Larcker [73], Table 4 demonstrates that the factor loadings for each individual item exceed 0.6, the CR values regularly surpass 0.7, and the values of AVE are all above 0.5. Therefore, the measurement scale utilized in this investigation displays a high degree of convergent validity.

**Table 4. Results of convergent validity**

Constructs	Items	Factor loadings	CR	AVE
Authenticity (AUT)	AUT1	0.812	0.864	0.615
	AUT2	0.764		
	AUT3	0.744		
	AUT4	0.814		
Interactivity (INT)	INT1	0.740	0.779	0.540
	INT2	0.754		
	INT3	0.710		

Entertainment (ENT)	ENT1	0.776	0.840	0.569
	ENT2	0.725		
	ENT3	0.771		
	ENT4	0.743		
Flow Experience (FE)	FE1	0.743	0.818	0.530
	FE2	0.726		
	FE3	0.702		
	FE4	0.739		
Consumer Purchase Intention (PI)	CPI1	0.723	0.763	0.518
	CPI2	0.719		
	CPI3	0.717		
hedonistic Shopping Value (HSV)	HSV1	0.940	0.964	0.843
	HSV2	0.901		
	HSV3	0.898		
	HSV4	0.917		
	HSV5	0.934		

The diagonal values of the AVE are represented as the square roots in Table 5. If the square root of the AVE value for each construct exceeds the correlation coefficients between constructs, it indicates good discriminant validity [73]. The square roots of the AVE values are denoted by the values on the diagonal of Table 5. The table provides evidence that the correlation coefficients between the corresponding constructs are smaller than the square root of the AVE value for each construct. This indicates that the scales utilized in this research possess adequate discriminant validity.

**Table 5. Discriminant validity analysis results**

Constructs	AVE	PI	FE	HSV	AUT	INT	ENT
CPI	<b>0.518</b>	0.720					
FE	0.530	<b>0.372**</b>	0.728				
HSV	0.843	<b>0.496**</b>	<b>-0.574**</b>	0.918			
AUT	0.615	<b>0.323**</b>	<b>0.389**</b>	<b>-0.072</b>	0.784		
INT	0.540	<b>0.307**</b>	<b>0.466**</b>	<b>-0.144**</b>	<b>0.282**</b>	0.735	
ENT	0.569	<b>0.319**</b>	<b>0.422**</b>	<b>-0.142**</b>	<b>0.314**</b>	<b>0.284**</b>	0.754
<b>Mean</b>		<b>3.74</b>	<b>3.77</b>	<b>2.67</b>	<b>3.53</b>	<b>3.85</b>	<b>3.97</b>
<b>SD</b>		<b>0.88</b>	<b>0.87</b>	<b>0.75</b>	<b>0.95</b>	<b>0.89</b>	<b>0.85</b>

\*\*p < 0.01, The square roots of the AVE values are shown by the numbers in bold along the diagonal.

#### 4-3-Assessment of Common Method Bias and Multicollinearity

By utilizing a questionnaire survey that collected data from a consistent sample of respondents, common method bias was introduced into this investigation. To effectively address the occurrence of common method bias, the measures proposed by Podsakoff et al. are recommended to be followed [74]. Was implemented, which included both preventive measures and poststatistical tests. The first portion of the questionnaire explicitly delineated the research objective in relation to preventive interventions. The questionnaire was designed to be completed anonymously to reduce problems associated with semantic ambiguity. Furthermore, consumers residing in various regions and towns were intentionally chosen for e-business live broadcasting. The current study utilized Harman's single-factor test to investigate prevalent technique bias, taking into account the perspective of poststatistical testing. Without using any rotation, a major component analysis was carried out on all of the measurement items related to interaction, authenticity, entertainment, flow experience, and the willingness of buyers to make purchases. The findings revealed that the percentage of variation accounted for by the initial factor, which had an eigenvalue exceeding 1, was 29.171%. This figure falls below the essential criterion of 50%, as established by Podsakoff et al. [74]. Hence, this study lacks substantial evidence of common technique bias.

Multicollinearity refers to the issue in linear regression models where there is a high degree of correlation between independent constructs, leading to inaccurate model estimates. Indicators such as the variance inflation factor (VIF) are utilized in the process of determining whether multicollinearity exists. According to the findings, which included an investigation into the presence of multicollinearity in the model, the VIF for flow experience is 2.38, that for hedonic

shopping value is 1.603, that for authenticity is 1.267, that for interactivity is 1.334, and that for entertainment is 1.278. All the variance inflation factor (VIF) values in this study were  $< 5$ . The conclusion that can be drawn from this is that there are no issues with multicollinearity that are stated in this paper.

#### 4-4- Hypothesis Testing

##### 4-4-1- Direct Effects

In this section, the research model was constructed using AMOS 26.0 to examine the fit of the model and validate the research hypotheses. The model comprises 5 latent variables and 18 observed variables, as depicted in Figure 3.

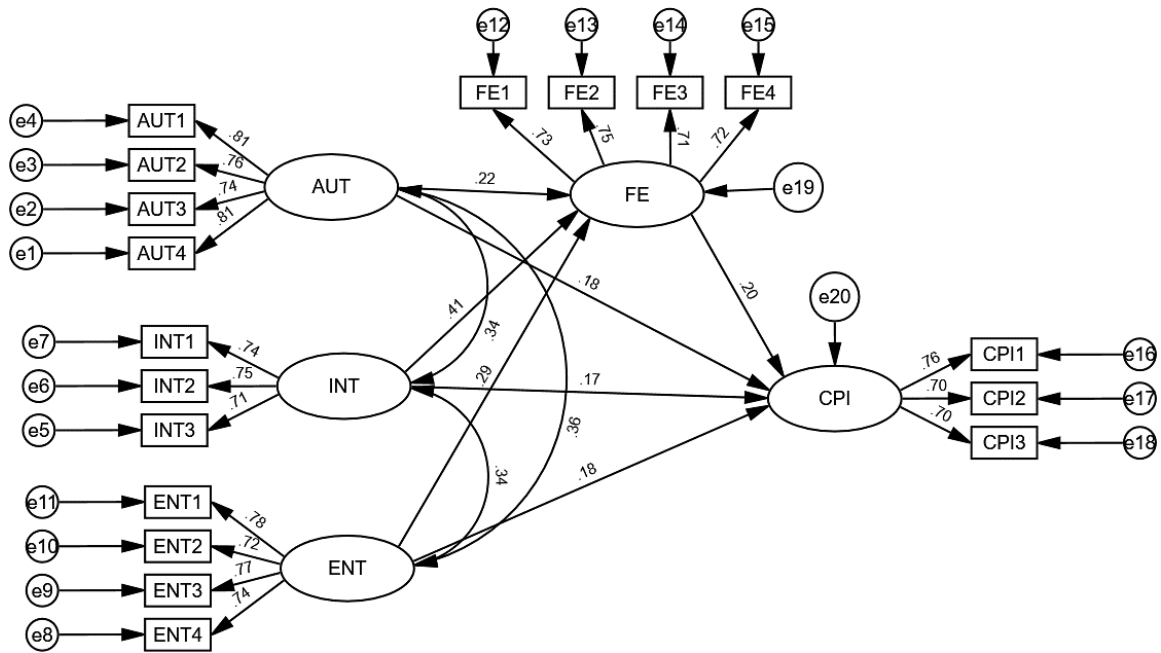


Figure 3. Structural model results

We may analyze each pathway's influence on consumer purchasing intention by examining the model parameter estimation summary table, which includes e-commerce live broadcasting attributes (authenticity, interaction, and entertainment) and flow experience. The study analyzed the links between research concepts using path analysis to confirm the given research hypotheses. The path coefficients and results regarding the hypotheses are detailed in Table 6.

Table 6. Structural equation model validation

Path	Unstandardized Estimate	S.E.	T Value	P Value	Standardized Estimate	Hypothesis
CPI ← AUT	0.15	0.058	2.579	0.01	0.179	H1a: support
CPI ← INT	0.18	0.086	2.084	0.037	0.172	H1b: support
CPI ← ENT	0.186	0.076	2.434	0.015	0.179	H1c: support
FE ← AUT	0.196	0.054	3.651	***	0.218	H2a: support
FE ← INT	0.454	0.076	5.948	***	0.406	H2b: support
FE ← ENT	0.325	0.07	4.666	***	0.291	H2c: support
CPI ← FE	0.182	0.088	2.075	0.038	0.196	H3: support

\*\*\* $p < 0.001$ .

The outcomes are detailed in Table 6. The interactivity ( $\beta = 0.172$ ,  $T = 2.084$ ,  $p < 0.037$ ), authenticity ( $\beta = 0.179$ ,  $T = 2.579$ ,  $p < 0.01$ ), and entertainment ( $\beta = 0.179$ ,  $T = 2.434$ ,  $p < 0.015$ ) variables all demonstrated favorable effects on the willingness of customers to make a purchase. Thus, hypotheses H1a, H2a, and H3a are confirmed. This indicates that within the characteristics of e-commerce live streaming, authenticity, interactivity, and entertainment all have significant effects on consumer purchasing intention.

Authenticity and interaction with the features of e-commerce live streaming significantly impact customers' purchase willingness. This conclusion is supported by several empirical studies [36, 63] indicating the crucial role of authenticity and interactivity in affecting consumers' purchasing intentions. Specifically, the impacts of authenticity ( $\beta$

=0.179) and interactivity ( $\beta=0.172$ ) on consumers' purchasing intentions are quite similar. This is because authenticity helps reduce consumers' skepticism and uncertainty about product information, enhances trust, and simultaneously stimulates viewers' interest and emotional responses to positive aspects. Moreover, consumer interaction with hosts and other viewers enables them to gain deeper insights into product information and user experiences, facilitating their easy involvement. Furthermore, the impact of entertainment in e-commerce live streaming on consumer purchasing intention is significant, consistent with findings from previous studies [46, 47], indicating that entertainment directly influences consumer purchasing intention. However, this differs from the findings of Liu et al. [37], possibly due to the focus of Liu's study [37] on tourism e-commerce live streaming, where tourism products are primarily service oriented. Viewers who watch e-commerce live streams for amusement may not necessarily have the desire to make a purchase. Nevertheless, in today's era where online shopping has become a prevalent mode of shopping, e-commerce platforms regularly update entertainment activities to cope with fierce market competition. These platforms engage in activities such as lucky draws, virtual red envelope distribution, and interactive likes to maintain viewers' entertainment and engagement, with the expectation of further stimulating consumers' desire to make purchases. Therefore, gaining a deeper understanding of the relationship between consumer purchasing intentions and the characteristics of e-commerce live streaming is crucial for e-commerce live streaming platforms and businesses.

The outcomes are detailed in Table 6. The variables interactivity ( $\beta = 0.406$ ,  $T = 5.948$ ,  $p < 0.001$ ), authenticity ( $\beta = 0.218$ ,  $T = 3.651$ ,  $p < 0.001$ ), and entertainment ( $\beta = 0.291$ ,  $T = 4.666$ ,  $p < 0.001$ ) all positively affected flow experience. Thus, H2a, H2b, and H2c are confirmed. This indicates that within the characteristics of e-commerce live streaming, authenticity, interactivity, and entertainment all have significant effects on the flow experience.

Authenticity and interactivity are attributes of e-commerce live broadcasting that have a direct impact on the flow experience of consumers. This conclusion is supported by multiple empirical studies [45, 47] indicating the crucial role of authenticity, interactivity, and entertainment in affecting the flow experience. Specifically, interactivity ( $\beta=0.406$ ) has a slightly stronger impact on the flow experience than does authenticity ( $\beta=0.218$ ) and entertainment ( $\beta=0.291$ ). This is because authenticity and entertainment in e-commerce live streaming are mostly achieved through interactive activities. Features such as product experiences, real-time Q&A sessions, and interactive chat interactions enhance consumers' sense of participation and belonging, leading to greater immersion in the live stream and a more intense flow experience. Therefore, enterprises should closely monitor changes in market demand, ensure the authenticity and reliability of the product information delivered, and promptly update a series of entertainment activities and interactive sessions to enhance consumers' attention, engagement, trust, and satisfaction. These measures will contribute to improving the user experience and meeting consumers' demands for novel experiences, thereby increasing purchase intention and fostering the long-term development of business operations.

The outcomes are detailed in Table 6. The flow experience ( $\beta = 0.196$ ,  $T = 2.075$ ,  $p < 0.038$ ) had a significant impact on the willingness of customers to purchase. Consequently, H3 is supported. This result is consistent with the findings of empirical studies [45, 47]. The flow experience enables consumers to be more focused on the live stream content, generating interest and positive feelings toward the products, thereby enhancing the likelihood of making a purchase.

#### 4-4-2- Mediating Effects

The characteristics of e-commerce live broadcasting, flow experience, and purchase intentions are investigated in Table 7, which examines the mediating influences of these two factors. Additionally, to evaluate the impacts of mediating factors, a bootstrap analysis was performed on 5,000 samples [75, 76]. The results demonstrated that the mediating effect of flow experience on the purchase intentions of customers through authenticity was 0.185, according to a 95% confidence interval that excluded zero. Significant mediating effects are observed; thus, H4a is supported. This indicates that the authenticity of live streaming e-commerce significantly mediates purchase intentions through the experience of flow. Furthermore, the results showed that flow experience acts as a mediator between purchasing intention and interaction ( $\beta = 0.263$ ) and between purchasing intention and entertainment ( $\beta = 0.245$ ). H4b and H4c are thus supported. This suggests that both the interactivity and entertainment value of live streaming e-commerce mediate purchase intentions significantly through the experience of flow. In contrast, the mediating effect of flow experience ( $\beta=0.263$ ) on the interactivity of live streaming e-commerce and purchase intentions is slightly stronger than that of authenticity ( $\beta=0.185$ ) and entertainment value ( $\beta=0.245$ ).

**Table 7. Results of the mediation effects test analysis**

Path	Point Estimate	Product of coefficient		Bias-corrected 95% confidence interval		Hypotheses
		S.E	Z Value	Lower	Upper	
AUT-FE-CPI	0.185	0.065	2.846	0.061	0.319	H4a: support
INT-FE-CPI	0.263	0.090	2.922	0.094	0.45	H4b: support
ENT-FE-CPI	0.245	0.082	2.988	0.098	0.422	H4c: support

The outcomes are detailed in Table 7. This may be attributed to the fact that when customers engage in live streaming e-commerce, their sense of participation and belonging is heightened through experiencing the authenticity of product usage scenarios, participating in entertainment activities, interactive segments, and other means, thereby fostering a positive and enjoyable user experience [42, 47]. However, it is only when customers truly experience flow that they believe that these products or services can benefit their lives, thus encouraging their purchase intentions. Consequently, businesses frequently offer real product demonstrations, red packets, coupons, interactive sessions with viewers, or lucky drawings on e-commerce live broadcasting platforms to fully engage participants and increase their inclination to make purchases.

#### 4-4-3- Moderating Effects

Finally, we employed hierarchical regression combined with the PROCESS SPSS plugin to compute the moderation effects. Model M1 displays the findings in Table 8. We focused primarily on observing the influence of demographic characteristics, which acted as control variables, on consumers' intentions to make a purchase. These variables include sex, age, education and so on. Flow experience was included as an independent variable in Model M2, and the results ( $B = 0.336$ ,  $t = 6.885$ ,  $p < 0.001$ ) indicated a significant positive correlation with purchasing intention. Being in a state of flow is a state that is both pleasurable and highly immersive. The flow experience is something that customers go through when they are involved in watching live streaming through e-commerce, which in turn increases their intention to purchase products that are showcased on a live broadcast on the website. Hedonic shopping value was included as an independent variable in Model M3, and the results ( $B = 0.556$ ,  $t = 10.849$ ,  $p < 0.001$ ) indicated a statistically significant association between hedonic shopping value and purchasing intention. Hedonic shopping value has a significant positive impact on purchase intention, indicating that when consumers perceive shopping as an enjoyable experience, their willingness to purchase is strengthened. This reflects consumers' pursuit of pleasure and enjoyment during the shopping process. Flow experience and hedonic shopping value were both taken into consideration simultaneously in Model M4, and an interaction term was created to describe the relationship between them. The statistical analysis revealed that the interaction between flow experience and hedonistic shopping value had a substantial and positive influence on purchase intentions ( $B = 0.337^{***}$ ,  $t = 34.164$ ,  $p < 0.001$ ). This indicates that there is a relevant interaction between the two characteristics. Both flow experience and hedonic shopping value had significant positive impacts on the purchasing intentions of customers. It is important to note that the connection term between flow experience and hedonistic shopping value has a strong positive influence on purchase intentions. This finding suggests that when customers simultaneously experience flow and hedonistic shopping value, their intention to make a purchase significantly increases. In other words, hedonic shopping value acts as an advantageous moderator in the connection between flow experience and customers' willingness to purchase.

**Table 8. The moderation effects test analysis results**

Constructs	CPI		CPI		CPI		CPI	
	M1		M2		M3		M4	
	B	t	B	t	B	t	B	t
Gender	0.065	0.705	0.024	0.273	0.107	1.328	0.027	1.759
Age	-0.068	-1.727	-0.044	-1.192	-0.076	-2.220	-0.007	-1.03
Education	-0.088	-1.187	-0.082	-1.185	-0.083	-1.301	-0.017	-1.404
Occupation	-0.036	-0.999	-0.022	-0.656	-0.040	-1.264	0.003	0.481
Income	0.250	6.250	0.213	5.607	0.212	6.085	0.009	1.326
FE			0.336***	6.885			0.083***	2.982
HSV					0.556***	10.849	0.172***	5.277
FE*HSV							0.337***	34.164

\*\*\*  $P < 0.001$

To visually demonstrate the moderating impact of hedonic shopping value, this study constructed a simple slope plot with the mean plus or minus one standard deviation ( $M \pm 1SD$ ) [77]. Figure 4 depicts the correlation between hedonistic shopping value and the inclination to engage in impulsive purchasing, which is impacted by the flow experience of customers. Figure 4 was kindly consulted for a graphical depiction. Because of this moderating effect, the regression slopes vary as the moderator variable is at different levels. More precisely, there is a discernible upward trend in the slope of the relationship between the purchasing intentions of customers and the flow experience as the hedonic purchasing value increases from a minimum to a maximum value. This discovery demonstrates that flow experience positively moderates the relationship between the purchase intentions of customers and hedonistic shopping value. Therefore, H5 is supported. Therefore, companies can enhance consumer purchasing intentions and improve their competitiveness by leveraging the interaction between flow experience and hedonic shopping value through personalized services, pleasant shopping environments, user engagement, and quality services.

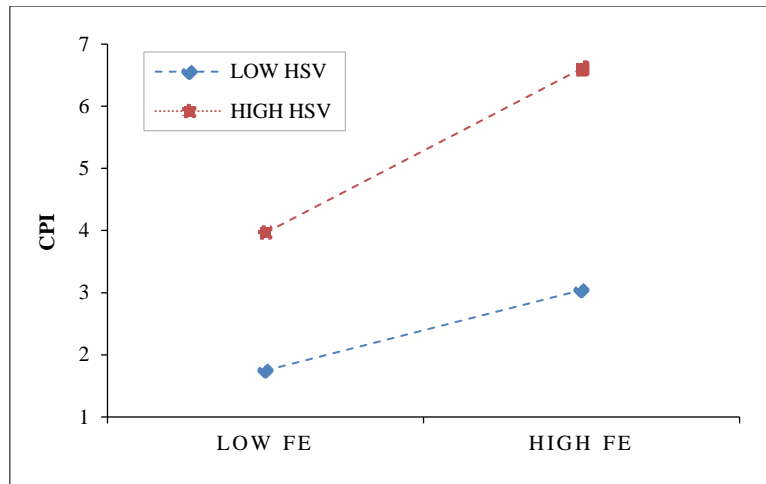


Figure 4. The  $M \pm 1SD$  simple slope plot

## 5- Discussion and Conclusion

### 5-1-Discussion

This study investigates customers' purchasing intentions during e-commerce live broadcasting via the S-O-R model. The primary objective of this study is to investigate the impact that live streaming capabilities in online shopping portals have on users' DAGBS. Specifically, flow experience analysis is used to identify the antecedents and pathways that influence the purchasing intentions of customers. Additionally, it analyzes the route of consumer purchase intention under flow experience through the lens of hedonic shopping value. Through empirical research and analysis, the following conclusions are drawn:

Consumers' willingness to make a purchase is positively influenced by the fact that e-commerce live broadcasting provides them with opportunities for interaction, authenticity, and enjoyment. Among these three factors, interactivity has a slightly weaker impact on consumer purchase intentions than authenticity and entertainment. The current research showed that this authenticity is demonstrated by the capacity of e-business streamers to acquire and maintain clientele via authentic product displays, which increases conversion rates in comparison to conventional online marketing [15, 78]. Entertainment is reflected in e-commerce live streaming through creative product presentation methods, such as special effects and virtual reality technology. Innovative presentations such as these capture the audience's attention, enhancing their overall entertainment experience. This not only includes the display of products but also encompasses entertaining content such as skits, performances, music, and more. These additional elements of entertainment provide viewers with a broader range of enjoyable experiences, increasing their engagement in live streaming. The entertainment aspect of e-commerce live streaming is manifested primarily through various forms of interaction, creativity, and entertaining content, aiming to enhance audience engagement and shopping intentions. While the impact of interactivity on consumer purchase intentions may be slightly weaker, it still exerts a positive influence. This could be attributed to the heightened immersion provided by e-commerce live streaming. The interaction between hosts and consumers allows for real-time experiences before actual shopping, tailoring the presentation of travel products to consumer preferences. Hosts foster an in-person purchasing environment by exchanging personal experiences, which empowers consumers to gain first-hand insights into the advantages and disadvantages of e-business products. This kind of flow experience is positively impacted by the authenticity, entertainment, and interactivity of e-commerce live broadcasting; interactivity has the most pronounced effect among the three. The primary reason for this could be that real-time participation in interactions allows consumers to feel that they are part of the live stream. This experiential engagement in live interactions stimulates audience interest, enhances consumer involvement, and fosters a heightened focus on live content, facilitating the generation of a flow experience. Entertainment is mostly manifested in the context of interactivity, so its impact on the flow experience is comparatively weaker than that of interactivity. Authenticity primarily induces a flow experience by building trust, reducing doubts, and creating a genuine shopping experience. However, achieving these objectives through e-commerce live streaming in a single instance is often challenging, as ensuring authenticity while positively influencing the flow experience has the lowest impact among the three factors.

Moreover, the flow experience serves as an intermediary in the relationship between the attributes of live broadcasting and the user's inclination to make a purchase. The study's findings suggest that the flow experience is enhanced by the interaction, authenticity, and entertainment value of live streaming for e-commerce. The flow experience acts as a mediator in the relationship between the characteristics of e-commerce live streaming and the impact that these characteristics have on consumers' intentions to make a purchase, which results in the flow experience having a significant influence on purchase intentions. Customers can engage in interactive communication with hosts and other

consumers via e-commerce live streaming, leading to a deep sense of involvement in the live broadcasting setting. The credibility of live broadcasting can be established by presenting genuine demonstrations of product features, real-life usage, and comments from customers. This fosters a more genuine purchasing experience, hence enhancing consumer interest in products. The entertainment value of live broadcasting in e-commerce is achieved through various forms of interaction, creativity, and entertaining content and satisfies consumers' pleasurable psychological needs. The live stream in e-commerce, guided by hosts' stimuli and guidance, subconsciously induces a state of flow in customers, leading them to actively participate and develop intents to make purchases. These findings support the findings of Huang et al. [54].

Finally, when consumers simultaneously experience both flow and hedonistic shopping value, their willingness to engage in shopping greatly increases. This finding suggests that hedonistic shopping value plays a beneficial moderating role between flow experience and the intention to purchase. As a result, consumers are more likely to engage in shopping. This phenomenon may be attributed to the high compatibility and consistency between hedonic shopping values and the flow experience, which can lead to the formation of mutually reinforcing and complementary relationships at the conceptual level. Hedonic shopping values emphasize the joy and pleasure of shopping, highlighting the satisfaction and enjoyment derived from the shopping process itself. In this context, consumers are more focused on the pleasurable experience of shopping than on the actual products purchased. This positive emotional state aligns with joy and involvement in the flow experience, thereby strengthening the positive moderating effect between flow experience and hedonic shopping values. In this scenario, flow experience may serve as a crucial factor in achieving a pleasurable shopping experience, consequently enhancing the willingness to engage in shopping activities.

### **5-2- Conclusion**

The aim of this study is to theoretically explore how the characteristics of live e-commerce broadcasting influence consumer flow experience and how flow experience, in turn, affects consumer purchase intention, as well as the role of hedonic shopping value in moderating the relationship between flow experience and consumer purchase intention. Using the SOR model framework, the researchers identified authenticity, engagement, and entertainment as external stimuli in e-commerce broadcasting host features. Flow experience was identified as the psychological and emotional reaction of consumers, while purchase intention was considered their response. This approach creates a theoretical framework outlining the links between these parts. Moreover, hedonic shopping value serves as a moderating factor, whereby when consumers experience both flow and hedonic shopping value simultaneously, their purchase intention is significantly enhanced. The data strongly corroborates the proposed research model and results in intriguing discoveries. For instance, in e-commerce broadcasting, features have a direct influence on the flow experience. These characteristics include authenticity, interactivity, and entertainment. When customers actively participate in the process of e-commerce broadcasting and create an atmosphere that is pleasant and harmonious through interaction, their flow experience might further persuade them to make a purchase. Additionally, if consumers with hedonic shopping values experience flow during e-commerce broadcasting, their purchase intentions are significantly enhanced. Therefore, companies can provide real product displays, red packets, coupons, live interactions with viewers, or lucky drawings on e-commerce broadcasting platforms to immerse customers and foster pleasant experiences. Furthermore, through further analysis of viewing and purchasing data, companies can identify target consumers with hedonic shopping values to further promote increased purchase intention.

### **5-3- Research Contribution**

Initially, this paper selected three common factors among the various characteristics of e-commerce live broadcasting. These elements included interaction, authenticity, and entertainment. Researchers in this paper then investigated the effects that these qualities have on the intention of customers to make a purchase. Past studies have indicated that consumer purchase intentions in e-commerce live streaming may be influenced by factors such as broadcasting strategies, interactions, and social presence. However, previous research has predominantly examined the influence of the individual characteristics of e-commerce live streaming on consumer purchase intentions in isolation, but comprehensive systematic investigations are lacking, and studies that fail to link the characteristics of e-commerce live streaming with consumer flow experiences are lacking. This study fills this gap by confirming the positive effects of interactivity, authenticity, and entertainment in e-commerce live streaming on consumer purchase intentions, thereby enriching the research landscape of e-commerce live streaming. Furthermore, this research substantiates the efficacy of the SOR within the realm of e-commerce live broadcasting, thereby contributing to a more profound and comprehensive understanding of how consumer purchase intentions develop.

In addition, the purpose of this study is to analyze the role that flow experience plays in mediating the connection between the live streaming of e-commerce features and customer purchasing intention. This research contributes to a better understanding of purchasing intentions about e-commerce live-streaming activities. Because consumers who have high hedonic shopping values consider shopping to be a pleasurable activity and place a high priority on experiencing pleasure, these consumers were included in the research as a moderating mechanism during the later stage of the study, which was titled "Characteristics of e-commerce live broadcasting—flow experience—consumer purchasing intention."

According to the findings, flow experience acts as a mediator in the connection between the characteristics of e-commerce live streaming and the intention of consumers to make a purchase. On the other hand, hedonic shopping values have a positive moderating effect on the connection between the flow experience and the intention to make an impulsive purchase. Therefore, people who have high hedonic buying values demonstrate increased intent to make purchases as their flow experience becomes more intense. These findings contribute to the advancement of research on the cognitive and emotional responses that occur during live broadcasting in e-commerce.

#### ***5-4- Practical Contributions***

At the outset, the positive impacts of e-commerce live broadcasting functionalities on customer perception indicate that to enhance these three attributes during the development of live broadcasts, organizations and presenters should allocate resources. This is because these characteristics are the most important indicators of customer satisfaction. In regard to interactivity, improving interactive sessions in e-commerce live streaming by holding real-time question and answer sessions, lucky drawings, audience interactions, and other similar activities can enhance the atmosphere of the live broadcast and provide answers that are both detailed and accurate to questions that customers have. Regarding authenticity, hosts should strengthen the authenticity of products and consumer trust by showcasing real-life product usage scenarios, user reviews, etc., to create a sense of offline shopping for consumers. Hosts can also provide effective product evaluations based on their experiences and offer purchase recommendations to consumers. For entertainment, hosts can continuously innovate entertainment activities, such as inviting special guests and interactive games, to capture consumers' attention and increase their engagement.

Moreover, flow experience positively affects purchasing intention and mediates the relationship between e-commerce live streaming characteristics and consumer purchase intention, according to the findings of this study. Therefore, e-commerce live streaming platforms and hosts should aim to enhance consumer participation and a sense of belonging, promote the generation of flow experiences, and increase purchase intentions. First, e-commerce live streaming platforms and hosts should create engaging live content, including interesting product introductions, vivid demonstrations, and practical shopping tips, to encourage consumers to continue watching and making purchases. In addition, emotional bonds with customers can be fostered by employing cordial language, providing engaging and enthusiastic explanations, and encouraging interaction. Finally, e-commerce platforms should regularly collect user feedback to understand consumers' evaluations of live content and shopping experiences and promptly adjust and improve live broadcast strategies. These methods enhance consumers' flow experience, thereby increasing their purchase intention.

Finally, the research results indicate that hedonic shopping values moderate the relationship between flow experience and consumer purchase intention. Individuals with a high hedonic shopping orientation exhibit stronger purchase intentions as their flow experience intensifies. Therefore, e-commerce enterprises can leverage the interaction between flow experience and hedonic shopping values through personalized services, enjoyable shopping environments, user participation, and quality services to promote consumer purchase intentions and enhance competitiveness. First, consumers' preferences and interests should be understood, and personalized products and services should be provided. Consumers' shopping interests and enjoyment are stimulated through customized recommendation systems and personalized marketing strategies. Second, a pleasant and enjoyable shopping environment, such as music, lighting, and decoration, as well as friendly and enthusiastic service attitudes, should be provided to enhance consumers' hedonic shopping experience. During the process of consumers watching e-commerce live streaming, they actively respond to consumer needs and feedback, establish good customer relationships, and further enhance their purchase intentions.

## **6- Research Limitations and Further Expectations**

Despite the fact that this study has proven a number of crucial results, there are a variety of limitations that should be emphasized.

First, there is a limitation regarding the selection of influencing factors. This study focused on analyzing three dimensions of e-commerce live streaming characteristics: authenticity, interactivity, and professionalism. However, in reality, there are many other factors, such as product involvement, host charisma, and the alignment of influencers with product images, that could influence the entire consumer process. In addition to the abovementioned features, e-commerce live streaming may also be influenced by ambient cues and other characteristics simultaneously. As the generation of consumer purchase intentions is a complex process, future research endeavors should continue to refine and include new influencing factors for analysis.

The constraint that pertains to the single dimension of the mediating variable is the second potential limitation. The generation of consumer purchase intentions is a relatively complex process. Due to constraints in article length and the researcher's expertise, this study considers only the mediating role of flow experience as a single-dimensional variable. Although some scholars have treated flow experience as a single dimension, future research could explore flow experience as a dual dimension (e.g., arousal and pleasure) or even a tri-dimensional construct for a more nuanced



understanding. Furthermore, the influence of live broadcasting in e-commerce on the feelings and intentions of consumers to make purchases calls for additional research into the involvement of a variety of mediators and regulatory structures in the mechanism underlying this phenomenon.

The third limitation pertains to the constraints of the sampled population. During the questionnaire distribution process, the primary method employed was through the use of Questionnaire Star, which relies on dissemination through friends and QQ, which may result in the sampled population not being representative of all demographics. Additionally, utilizing self-report questionnaires to collect data may expose respondents to various influences, such as emotions and environmental factors. Consequently, there is a possibility of bias in the research results. In future studies, diverse measurement methods could be explored to ensure a more accurate measurement of the constructs.

Finally, consumer purchase intention does not equate to actual purchasing behavior. Transforming intention into behavior involves specific mechanisms, and comparing purchase behavior is the genuine manifestation of consumer consumption. Hence, upcoming studies may delve deeper into understanding the connection between consumers' intent to purchase and their actual behavior.

## 7- Declarations

### 7-1-Author Contributions

Conceptualization, Y-Y.W. and H.B.; methodology, Y-Y.W.; software, H.B.; validation, Y-Y.W. and H.B.; and Y-Y.J.; formal analysis, Y-Y.W.; investigation, Y-Y.W.; resources, Y-Y.W.; data curation, H.B.; writing—original draft preparation, Y-Y.W.; writing—review and editing, H.B.; visualization, Y-Y.W.; supervision, H.B.; project administration, Y-Y.J. All authors have read and agreed to the published version of the manuscript.

### 7-2-Data Availability Statement

The data presented in this study are available upon request from the corresponding author.

### 7-3-Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

### 7-4-Acknowledgements

I am very grateful to my supervisor Hira for the patient guidance and meticulous support in my academic research. Additionally, I appreciate the collaborative efforts of the Yaojing Yang team member in advancing this research. I also want to thank my family and friends for their continuous encouragement and support throughout my academic journey. Thank you for your companionship and assistance.

### 7-5-Institutional Review Board Statement

Not applicable.

### 7-6-Informed Consent Statement

Not applicable.

### 7-7-Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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